The American Architect and Building News.

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BOSTON, JULY 15, 1876.

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In our first notice of the revival of the Washington Monument project (*American Architect* No. 20, May 13), we objected strongly to the design as it was originally proposed, — an obelisk surrounded by a circular peristyle or "pantheon." We are glad to be informed that the design of the monument had been so far changed that the peristyle had been given up. The plate lately issued by the Monument Society shows the revised design, the obelisk four hundred and eighty-five feet in clear height, fifty-five feet square at the base, and thirty-six and a half at the top, and standing on a terrace two hundred feet square, built in two stories each about nine feet high. The upper story of the terrace is entirely surrounded by a plain flight of steps; the lower, by a balustrade with flights of buttressed steps at the four corners, which are truncated. This treatment would certainly not be so objectionable as the first proposed; but the terrace would still be painfully out of keeping. It does not in any sufficient way lead up to the obelisk, but merely offers an awkward contrast of horizontal lines, and an entirely inadequate base. The balustrade and steps would look altogether trivial; and the contrast would simply help to make the obelisk itself look bald and ungainly.

But the real trouble is with the original conception. We should be glad to be told who is responsible for it. The design was, we believe, obtained in competition; but the name of the designer seems to have dropped altogether out of sight. Apparently he was inspired with a desire to outdo the Bunker Hill Monument in its own way. The associations of the Bunker Hill Monument make us content to accept it without criticism; and no one would be willing to do without it. But one such monument is enough; and to reproduce it at Washington, eight times as big, and with its commanding simplicity thrown away, would be a mistake that we should come to regret, but never could cure. Now that Congress has declared, by a joint resolution, in favor of completing the Washington Monument at the expense of the Government, it becomes the authorities to consider carefully whether they are doing the thing in the right way, and not commit themselves and the country to an irretrievable mistake in a structure of commanding importance, that will be a type and a memorial for centuries. We appeal to the architects of the country, the only trained judges we have for such a matter, not to forget the importance of it, or let it pass without expression of their judgment.

The illustrations to be seen at Philadelphia of Mr. Story's design for the Centennial Monument to Liberty, which is to be erected in Independence Square, and for which subscriptions are invited, show a tall pedestal surmounted by a colossal statue of Liberty, wearing the Phrygian cap, and carrying a flag, the staff, tipped with an eagle, in her right hand, her left hand resting on a shield. Around the upper part of the pedestal moves a continuous procession of female figures, forty or so, which typify the different States and Territories of the Union. The choice of Mr. Story is one of the many judicious selections by which the men of Philadelphia have shown their wisdom. It is, of course, impossible to judge of the effect of the sculpture, from the somewhat rough lithograph that is published: the only means of showing it would be a sketch-model from the sculptor's own hand; and we have not heard that any such has been received. The figure of Liberty must be treated with much grandeur, in order to avoid the commonplace. To design the forty figures which encircle the pedestal, with the requisite variety and character, is an equally difficult task, one such as few sculptors of our day set themselves: and we can think of no American sculptor except Mr. Story, in whose hands we should feel that it was safe.

With regard to the monument as a monument, the case is not so satisfactory, and is too important and representative to pass without comment. The architectural part of the monument consists of three several octagonal pedestals, one above another, each smaller in plan and taller than the one beneath it. The forms are not interesting, and the detail is altogether commonplace and unworthy. Each pedestal is complete, with cap, die, and base; and either might be removed without damage to the composition. On the top a plinth in three stories supports the central figure: three continuous steps surround the base. The lithograph, although it cannot render the sculpture, shows the architectural detail with sufficient distinctness. It is a sort of compromise between Italian Renaissance and Italian thirteenth-century Gothic, the classic feeling predominating at the bottom, where the detail is comparatively bold, and the mediæval at the top, where it is flat and attenuated. If the monument is built as it is designed, the power which we may expect to see in the sculpture will be sadly at odds with the feebleness of the architecture. The truth is, and it is one which we are slow to realize, though it is impregnable and important, that a sculptor ought never to attempt single-handed to design a monument, any more than an architect should a group of sculpture. It is difficult to design well a house or a bank, and requires special skill and special training. It is more difficult to design a monument, even a simple one, and requires more skill and training: there is hardly any thing, in fact, which taxes an architect's skill so much. If one examines the records of competitions in Europe he will find, we think, that rarely in Germany, almost never in France, does a sculptor venture to design an important monument without the help of an architect. The designs for sculpturesque monuments offered in France, where they know how to build monuments better than elsewhere, always bear the names of a sculptor and an architect. How it is in Italy, we do not know: it is likely that sculptors have it a good deal their own way. How it is with us, is shown by an abundance of feeble monuments. It may be that Mr. Story allowed himself to be assisted in his detail by a decorator. We cannot, of course, say that he did not consult with an architect; but if he did, it evidently ought to have been with some other, with one whose skill and position would have given him such rank in his profession as Mr. Story holds in his own, and would have required that their names should be associated together in the work.

Meanwhile competitions are open for two notable monuments abroad — at least two monuments to notable people. The committee for the Byron memorial in London invite designs from artists in all parts of Europe and America,

according to an announcement in the *Architect* of June 24. The monument is to be placed in Green Park, opposite the site of Piccadilly Terrace, and is to be a colossal statue in marble — Pentelican or Sicilian — or bronze, "on an appropriate pedestal." A statue of Pentelican marble would seem decidedly appropriate to the philhellenic poet, albeit his own art was somewhat unclassical. Sketch-models of quarter-size are required, and must be delivered at London before Oct. 4, 1876. The labor and cost of these models will be pretty burdensome to competitors; and, whatever ventures Englishmen may be tempted to, we should think foreigners would not be likely to risk their money and work in such a lottery. Nothing is said of any prizes; but a public exhibition of the models at South Kensington is promised; and it is said that "final judgment will be passed by a committee of selection, which will meet the approval of competitors." How this last desideratum is to be obtained, we are not told: we presume that at most nothing more is guaranteed than approval until the decision is made.

The *Deutsche Bauzeitung* advertises for designs of a monument to Bismarck, to be set up in the Augustiner Platz at Cologne, by the municipality of that city. It is to be a bronze statue nine feet high, on a simple granite pedestal. (The height is prescribed in the notice, with curious exactness, at two metres and eighty-three centimetres.) The competitors are required to submit, under motto, sketch-models of the statue eighteen inches high, and estimates of cost, before the 7th of August. Two prizes are offered, of five hundred and a thousand marks respectively, — say one hundred and fifty and three hundred dollars.

THE French architectural journals complain of the meagreness of the architectural exhibition in this year's *Salon*, in a way that indicates the same neglect among the French architects that we notice among our own. The exhibition of this year contains, says the *Moniteur des Architectes*, only seventy-six designs; a small number certainly, and a quarter less than in either of the last two years. Of these, about half are various competition designs, and the most of the remainder are either drawings of old architecture, or restorations; so that the journals are led to comment on the fact, that there is almost no showing of the principal works which are actually going on in the country, or have been recently finished. This is due, no doubt, to the fact that there, as here, the men who are building important works have little opportunity to provide any other drawings than such as are used in carrying on the work, and these are not of a kind appropriate to a public exhibition.

The new plan of electing the judges by the votes of the artists, exhibitors and non-exhibitors, resulted in the choice, for the architectural jury, of none but members of the Institute. Out of seventy-five electors, M. Duc received the votes of fifty-four: Messrs. Ballu, Lefuel, Questel, Garnier, and Lesueur were elected by decided majorities. M. Viollet-le-Duc was the next candidate, with only twenty-seven votes.

THE gallery in the *Palais de l'Industrie* which contains the drawings, say the French, is hardly visited by the public; and we can testify that the room at the Centennial where the architectural drawings are is usually empty, or almost so, even when the Art Building is thronged. The fact is, with us at least, and we don't doubt that it is so elsewhere, that, although people in general are interested in architecture in their own way, it is always with them a concrete and not a general interest. A man is interested in his own house, or his neighbor's house, or any prominent building that goes up before his eyes; but he pays very little heed to the architecture of a structure in which he has not an interest as a building; that is, one that is built for a purpose in which he has no share, and one which he is not going to have before him. Moreover, drawings of buildings to him have only the attraction which they borrow from his interest in the buildings they represent; or at best only a certain attraction as pictures, in which attraction of course they are altogether inferior to pictures of natural scenes or incidents. It is a result of this, and partly also a cause, that most men have no clear idea of the quality of architecture, and therefore show themselves, when they become members of building-committees, quite incapable of judging of the merits of designs, and also are unlikely to be aware of their incapacity.

THE ARCHITECTURAL EXHIBITION AT THE CENTENNIAL.

III. — FOREIGN ARCHITECTURE.

THE foreign architectural drawings exhibited at the Centennial are but few, and do not represent many of the strongest men in their respective countries; but they are of good rank, and show in an interesting and useful way the habits of design and execution that characterize those countries. Only England, France, and Belgium, so far as we saw, have contributed architectural drawings; of these, England sends most, and Belgium least, — one design, in fact. As we have said, the drawings of the different countries are grouped with their several exhibits of paintings, and are not shown together. Perhaps the most important example they offer, on the whole, is of thorough workmanship, both in design and rendering, of considerate study and careful adjustment, — the care that patiently follows out a design, and puts it on record with the precision which is necessary to give clearness to the conception, and insures from the beginning that the lesser parts shall be carefully adjusted members of a consistent whole. To this is to be added the evidence of a definite method of work, — habit of design, we may say, — which tells of discipline, and gives consistency and style to the work. These are the points where American artists (architects and others) are most apt to be weak, and where naturally their weakness is most apt to escape their own knowledge; where, therefore, we may get most useful hints, if we will accept a lesson.

The French architectural collection was not in order when we saw it, and was closed to the public. One room in the annex of the Art Building is assigned to it; and one row of drawings was hung. We did not see the work of any of the recognized leaders among the French architects; but they show some very good names. The drawings are all in color, like most French architectural drawings, and are notably distinguished from the English and American drawings, by the sobriety of their effect, and by a certain quiet straightforwardness of treatment, which records the good training that architectural students get in France. It is noticeable that the principal designs have perspective sketches, a thing not common in French work. The importance of the geometrical drawings is maintained, however; the perspectives being literally sketches, small in scale, and only slightly handled, while the geometrical drawings are large, and faithfully worked out in detail. This method we incline to think is more judicious, as it is more artistic, than the English and American habit of making panoramic perspectives, and treating the elevations only as working-drawings.

The one exception was the drawing of the new *Théâtre de la Renaissance* at Paris, by M. Lalande, which was a brilliant perspective drawing (the only one) on a comparatively large scale, and carried well into detail. It bore record of having taken a prize at the *Salon* of 1874, and made one wonder involuntarily what its associates had been; for it was not an attractive design. The drawing was strong, and full of *chique;* but the outline is harsh and awkward, the composition struck us as feeble, the detail poor and overloaded.

Much more interesting was M. Crépinet's fine design, one of the rejected ones in the competition for the great church of the *Sacré Cœur* at Montmartre, Paris. It is not strange that France, being a Catholic country, should hold closely to mediæval forms in her churches, given over though she is to the classic in architectural detail. Accordingly we find that M. Crépinet has designed what is in form a genuine Gothic cathedral, with nave, aisles, transepts, apse, clerestory, and triforium, all as purely Gothic in arrangement and proportion as St. Eustache or as Notre Dame itself, but all with good classicesque detail of the modern French school. The design is dignified and impressive. It is shown in a large and elaborately drawn façade and section (as well as plan), and in a small and vigorous but very sketchy perspective.

M. Devrez, the diocesan architect at Meaux, also exhibits a design for the same church. This is Romanesque in form, and suggestive of the church of St. Front at Perigueux. The flank elevation is at once picturesque and elegant in treatment, reminding one greatly of St. Front. The aisle round the tribune of the transept, and the double aisle round the choir, which are unlike St. Front, are not very happily managed; and the façade is marred by the treatment of the porch, which is awkwardly split open by an arch running up through two stories. The detail is a compromise between Southern French Romanesque and modern classic French. The perspective is a small sketch, high-colored, and consists mostly of hill, and blue and orange clouds. M. Devrez contributes also a picturesque villa, a little tame in detail, and an interior design for the chapels of the cathedral at Orleans, which is tame in all respects. The other drawings in the room are of less interest than those we have mentioned.

In a small room in the main Art Building, among a variety of prints and other small objects of the Belgium exhibit, is a design for a thirteenth-century French Gothic cathedral, by an architect of whose name we have lost our record, — the only Belgian design shown. It is rendered, as might be supposed, in the French manner, and shown in geometrical drawings only. It is a very good example of a good modern design in an old style. It is somewhat crowded in composition, and monotonous in detail, as modern attempts at a Gothic cathedral are apt to be; but it is "authentic" in style, and well considered; and it is not very high praise to say that it would be better architecture than any specimen that exists in Belgium of the period it serves to represent. The drawings are an example which our draughtsmen would do well to study for their careful workmanship.

The English drawings fill another of the small rooms in the Art Building. They are distinguished from the French by the predominance of more highly colored or imposing perspectives, as well as by their design. Pen-and-ink and colored drawings are perhaps in equal numbers. A connecting link with the French designs are those of Mr. Phené Spiers, an artist of French or at least semi-French training, whose Criterion Restaurant in Piccadilly won him early distinction, and who is one of the very few Englishmen who adopt the French manner. He contributes an admirably spirited perspective drawing of the Criterion Building, a very French and very clever design, and perhaps the most masterly drawing in the room. He also exhibits a design for the Church of the *Sacré Cœur*, altogether French in style, gracefully composed in elevation, with two turrets on the front set wide apart to show between them the dome over the choir, in a way that would, we should think, make the composition look loose and straggling in perspective. A somewhat tame Gothic design for a lunatic asylum at Windsor showed him at less advantage than his French work. Mr. Burges sends a drawing of his fine and vigorous cathedral at Cork, and another of his picturesque tower at Cardiff, — two of his best-known works. He sends also a fine drawing of the noble tower at the Temple Bar corner of his design for the new Law Courts. Two or three drawing of domestic interiors which he contributes are in singular contrast to these: they are recklessly coarse in detail, and wild with color. It is difficult to believe that they are the work of the same master. Mr. T. H. Wyatt's design for the new Exchange at Liverpool is an example of how much less successful the English Renaissance designs are — as they always have been — than their Gothic. The proportions are unhappy, and the detail poor, the Mansard roof badly adapted. M. Cooke's Malvern College is very uninteresting Gothic. Mr. R. H. Lee contributes a picturesque design in late Gothic for the Library of the Inner Temple, and another whose title we do not remember, showing a quiet finish of design that is worthy of emulation; and Mr. S. J. Nicholl, some few drawings that were more noticeable for the excellence of their work than for the interest of the designs. Mr. G. Aitchison exhibits some drawings for Mr. Leighton's house and studio, of which the interesting part was the interior decoration, harmonious and artistic, but of the sad tone which at present pervades most of the English decoration that we see, except, we might say, Mr. Burges's.

SANITARY DRAINAGE.[1]

WE hail with satisfaction a growing uneasiness concerning the disagreeable questions of sewerage, which such books as the one now before us are eminently calculated to strengthen and extend. The substance of this work appeared in a series of articles which were published in the Atlantic Monthly during last year, and which attracted a good deal of attention. The subject is unsavory as well as disturbing; but Mr. Waring has here treated it out of an experience and knowledge, and with a command of facts, which should make his book of great practical service to individual builders and to the community. There is perhaps no one department of the building-art, which has by common consent remained so entirely in the hands of the average builder, unscientific, empirical, dogmatic, and bigoted, and which has been so little governed by the plans and specifications or the personal supervision of the architect, as this most important and most difficult matter of drainage, as there is none in which the practical man, so called, has more to learn; and this at the same time that both architect and builder continue to give their languid assent to the proposition that no portion of the builder's work requires more urgently that it should be done with the best knowledge and skill and the most faithful supervision. The journeyman mason has laid the drains; the journeyman plumber has run the pipes; the journeyman carpenter has followed, and covered them up away from the incurious eyes of the easy owner, who knows his house is furnished with all the modern improvements at a sufficiently high cost, and who rests content in the assurance of safety, while sewer and drain and soil-pipe and trap deliver, with noiseless promptness, the seeds of disease and death from households and shops and factories miles away, through every story of his first-class dwelling.

The occasional notes of warning raised from time to time during the prevalence of epidemics, or when disordered sewers have exaggerated the offensiveness of their contents, have nearly failed of any practical result; and the only variation in the devices of plumbing and drainage in use a generation ago, which tends to mitigate the evils under which we willingly suffer, is the custom, only now becoming general, of ventilating the soil and waste pipes. This is of itself an immense safeguard, and, if it could be made universal wherever water-closets and set basins are in use, would go far in reducing the danger which now attends these modern contrivances. A perfectly intelligent system, however, would not stop here, but would review every step of the sewage route, from the point where the waste is first discharged to the place of its final deposit. The ventilation of the private soil-pipe must be followed by that of the sewer itself. By this step two advantages are secured. First, a current of fresh air flowing through the sewer dilutes the poisonous gases there generated, and renders them innocuous. Second, the free communication between the sewer and the outside air prevents the sucking out or forcing of the water from the traps of private waste and soil pipes in connection with the sewer, which is constantly liable to occur from the changing pressure upon the confined air, caused by the rise of the tide, a strong wind blowing upon or across the sewer-mouth, the flushing

[1] The Sanitary Drainage of Houses and Towns. By George E. Waring, Jun. Hurd and Houghton, Publishers, New York.

of the sewer during heavy rains, and by various other probable contingencies. "Typhoid fever is said to be rarely absent from towns with unventilated sewers."

Mr. Waring urges the abolition of private cesspools; contending that the health of the community would be less endangered, if the house-drainage were allowed to flow in the gutters of the streets, exposed to the diluting action of the atmosphere, than now, when it is permitted to soak into the soil from which the water of house-wells proceeds, and to accumulate "in unventilated and leaky caverns, whence the poisonous gases, sure to be produced, find their way through the drains into our houses or into their immediate vicinity. . . . The one thing that should never be allowed in a village, and which should even be regarded with great caution in the case of an isolated house, is the ordinary leaching cesspool."

The use of the public sewers of a town by great rendering-works, slaughter-houses, and similar establishments is deprecated; the writer suggesting not unreasonably that the community "should be compelled to construct sewers only for the removal of such waste matters as are incident to the daily life of all classes of the population. If breweries, chemical works, and other manufactories producing a large amount of liquid waste, are to be provided with a means of outlet, this should be done entirely at their own charge: their profit and convenience should not be advanced at the cost of every member of the community. And, more than this, the wastes of factories being often pernicious, not only on reaching the outlet of the sewer, but by the generation of gases within them, which may pervade all their ramifications, it is a serious question whether such establishments should not be compelled to secure independent outlets at their own expense, or at least to render their wastes innocuous before discharging them into the public drain, paying even then an extra sewer-rate proportionate to the extra service they require."

Furthermore, since the best system of sewerage depends for its efficiency and safety on the intelligence and thoroughness with which it is executed, it becomes a matter of importance that private drains as well as the public sewers should be laid under the supervision of the public officer who has the supervision of the latter. The best municipal systems recently executed make this obligatory on all builders. One of the printed regulations adopted by the city of Providence in the works now being carried on runs as follows: "No one but a drain-layer duly licensed by the water-commissioners will be allowed to make connections with the public sewers named in the above section, or to lay any drains in connection therewith."

The first quarter of Mr. Waring's book is a chapter of horrors, setting forth a frightful array of cases in which a single case of typhoid has communicated the seeds of that disease to large numbers of healthy persons at great distances from the original case, generally through the accidental connection between house-drains or public sewers with the public water-supply. Many of our readers will doubtless remember the case of the young ladies' seminary at Pittsfield, Mass., which occurred some ten years ago, and created a strong excitement throughout New England. In this case there was no single cause like that just mentioned; but a variety of circumstances combined to render the house a sink of disease. "The house was a large one, of wood, closely surrounded by trees, with a foul barnyard near it, containing water in which swine wallowed, and emitting offensive odors. The centre of the main building was used for storing vegetables; and its private closets connected by closed closets with the main halls of the building. The kitchen-drain opened eighty or ninety feet away from the building. The vaults of the private closets were shallow, and filled nearly to the surface with semi-fluid material (they received the slops from the sleeping-rooms). The house seems to have been beset with danger on every side; and it was often necessary in the heat of summer to close the windows to keep out offensive odors. The whole case was examined, after the attack, by Drs. Palmer, Ford, and Earle, of the Berkshire Medical College; who took so far as possible the testimony of every member of the household, and of the relatives of those who had died after being removed to their homes. Then investigation forced the origin of the Maplewood fever (which was clearly marked typhoid) unquestionably upon the unhealthiness of the air of the house, made impure by the causes above specified. This Maplewood fever is one of the most fatal ever recorded. Of seventy-four resident pupils heard from, sixty-six, or nearly ninety per cent, had illness of some sort; and fifty-one, or nearly sixty-nine per cent, had well-marked typhoid fever. Of the whole family of one hundred and twelve persons, fifty-six had typhoid fever; and, of these fifty-six, sixteen died."

What is particularly unsettling in considering the cases of simple poisoning by sewer-gas, is the fact that we cannot depend for warning on our sense of smell or of taste. "Poisonous sewer-gas cannot be clearly defined. It is known chiefly by its effect: even its odor is rarely a marked one; and danger is believed to lurk not so much in those foul stenches which appeal to our senses, as in those odorless mawkish exhalations which first announce themselves by headache and debility."

And, in regard to the poisoning of wells by sewerage, we are told that the water most dangerously tainted is apt to be especially sparkling and refreshing to the taste. Many instances of this curious truth are preserved; perhaps the most striking being that of the Aldgate Pump in London, which has been long noted for the purity and freshness of its water, and which has been recently closed by the authorities. "There is much in the flavor and appearance of the water, which explains the belief in its exceptional purity. It is clear, sparkling, and has that cool saline flavor which is so very agreeable to the palate, and which is harmless enough when the saline ingredients are not accompanied by organic taint. In this case, however, the analysis by Prof. Wauklyn shows that this cool refreshing flavor is due to the impregnation of the water with salts derived from the decomposing sewage which finds its way into the well, partially filtered and decomposed by the surrounding soil, the soil itself being evidently loaded with organic matter."

A very important question in all systems of sewerage is the proper size to be given to sewers. On this point Mr. Waring has much to say, and from his own experience as an engineer in charge of sewerage, as well as the experience of others, supplies some most interesting and striking instances of the efficiency of small sewers in removing large quantities of sewage, and of their superiority in the matter of keeping themselves clear. His observations on the volume of sewage matter at Saratoga especially, in connection with his own work there, are very conclusive in establishing the entire fallacy of the prevailing ideas and practice in regard to the necessary sizes of sewers and drains.

Closely connected with the question of the sizes of sewers is that of the best material. Mr. Waring agrees with the best English authorities on this point, that sewers of masonry ought to be superseded by glazed pipes; and, that in all cases except that of the great mains of cities, there is no difficulty in making pipe of sufficient size for all requirements.

Mr. Waring's account of the proper method of flushing sewers, for examining and cleansing them by means of man-holes and lamp-holes, his descriptions of the best form of catch-basins and grease-traps, his discussion of the drawbacks attending the use of water-closets, and the various devices for avoiding them, are very clear and direct and of great value. He expresses an emphatic approval of Moule's earth-closet, and adduces much various testimony to its efficiency, convenience, and cleanliness. There is also an account, not quite so clear as we could wish, of the so-called pneumatic system of sewerage contrived by Capt. Liernur, and in use in several of the cities of Holland. Mr. Waring's account leaves the impression on our mind of an ingenious invention whose efficiency would be apt in practice to be interfered with by practical difficulties.

THE ILLUSTRATIONS.

THE UNITED STATES CUSTOM-HOUSE AND POST-OFFICE, CHICAGO, ILL. MR. WILLIAM A. POTTER, SUPERVISING ARCHITECT, TREASURY DEPARTMENT.

A DESCRIPTION of this building will be found in the letter of our Chicago correspondent.

AN IRON STORE-FRONT ON BROADWAY, NEW YORK. MR. R. M. HUNT, ARCHITECT.

The façade is decorated in party-color. The panels are filled with porcelain decorated with arabesques; the shafts of the columns are incased in brass and nickel-plated drums; and the mouldings, etc., painted with various colors.

PERSPECTIVE VIEW OF THE OLD SOUTH CHURCH, BOSTON, MASS

THE FRENCH BUILDING. — During the last week of June, the French commissioners opened their headquarters at the Centennial Exhibition. The building measures 50 by 100 feet, and consists of an iron frame imported from France, filled in with red and black bricks. There are in it two offices and an exhibition hall where are exhibited models, pictures, and drawings of the principal engineering structures of France. The plans for the building were prepared by M. de Darteiu, professor at the *École des Ponts et Chaussées.*

U.S. CUSTOM HOUSE & POST OFFICE, CHICAGO, ILL.

ORIGINAL DESIGN FOR THE UPPER PORTION OF BUILDING.

A. B. MULLETT, SUPERVISING ARCH'T. TREASY DEPARTM'T

HELIOTYPE

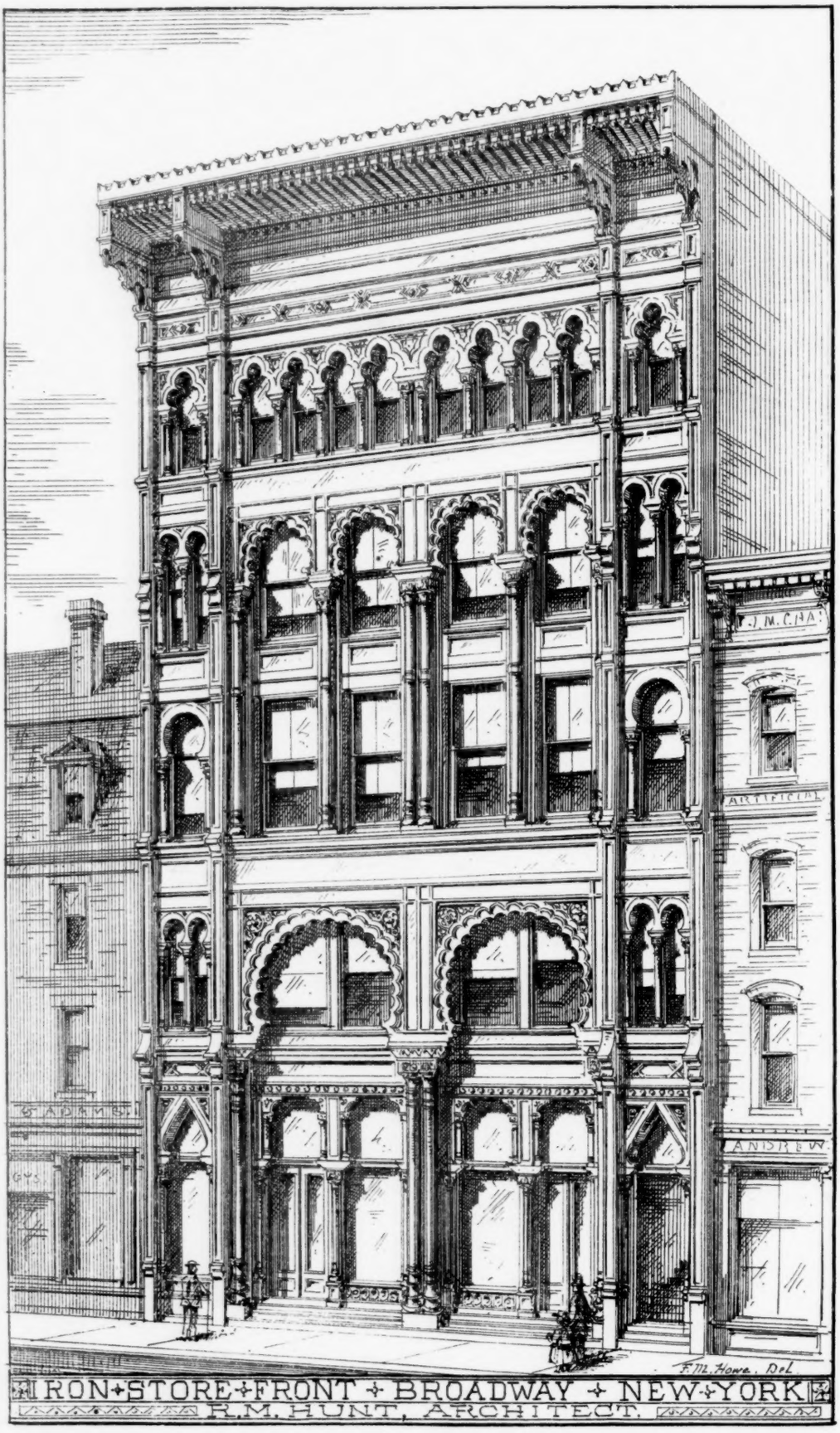
JAMES R. OSGOOD & CO. BOSTON

U.S. CUSTOM HOUSE & POST OFFICE, CHICAGO, ILL.

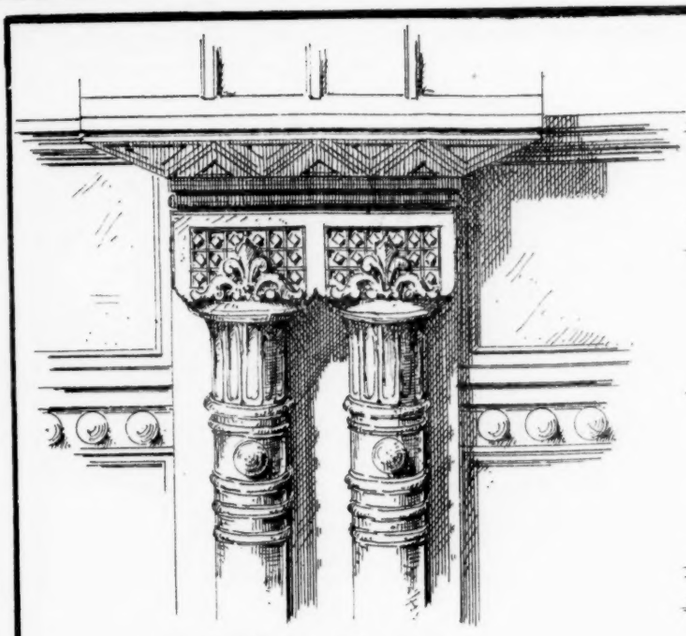
MODIFIED DESIGN FOR THE UPPER PORTION OF BUILDING &c.

WM. A. POTTER, SUPRVIS'G ARCHT. TREASY. DEPARTMT.

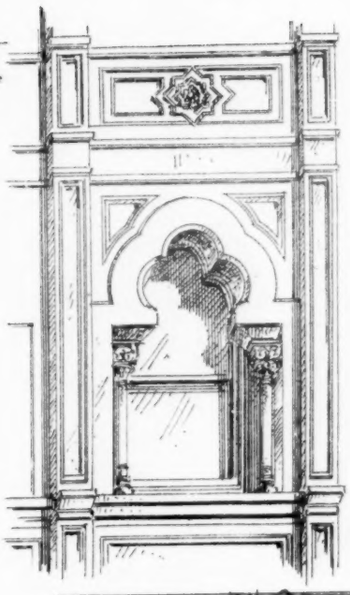
James R. Osgood & Co. Boston



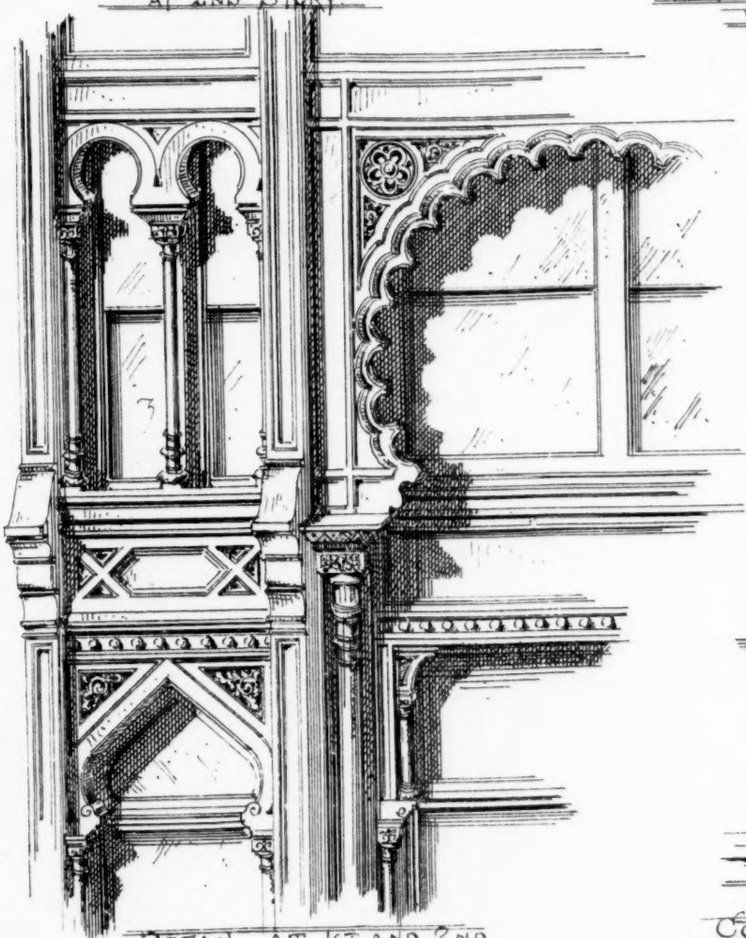
HELIOTYPE
JAMES R. OSGOOD & CO. BOSTON



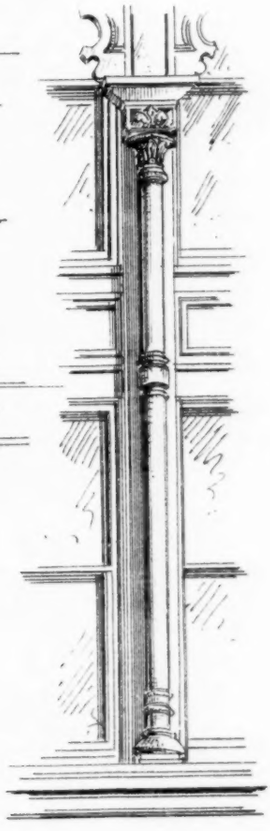
COUPLED CAPITAL AT 2ND STORY



DETAIL OF 5TH STORY WINDOW



DETAIL AT 1ST AND 2ND STORY WINDOWS



COLUMN AT 3RD. AND 4TH. STORIES

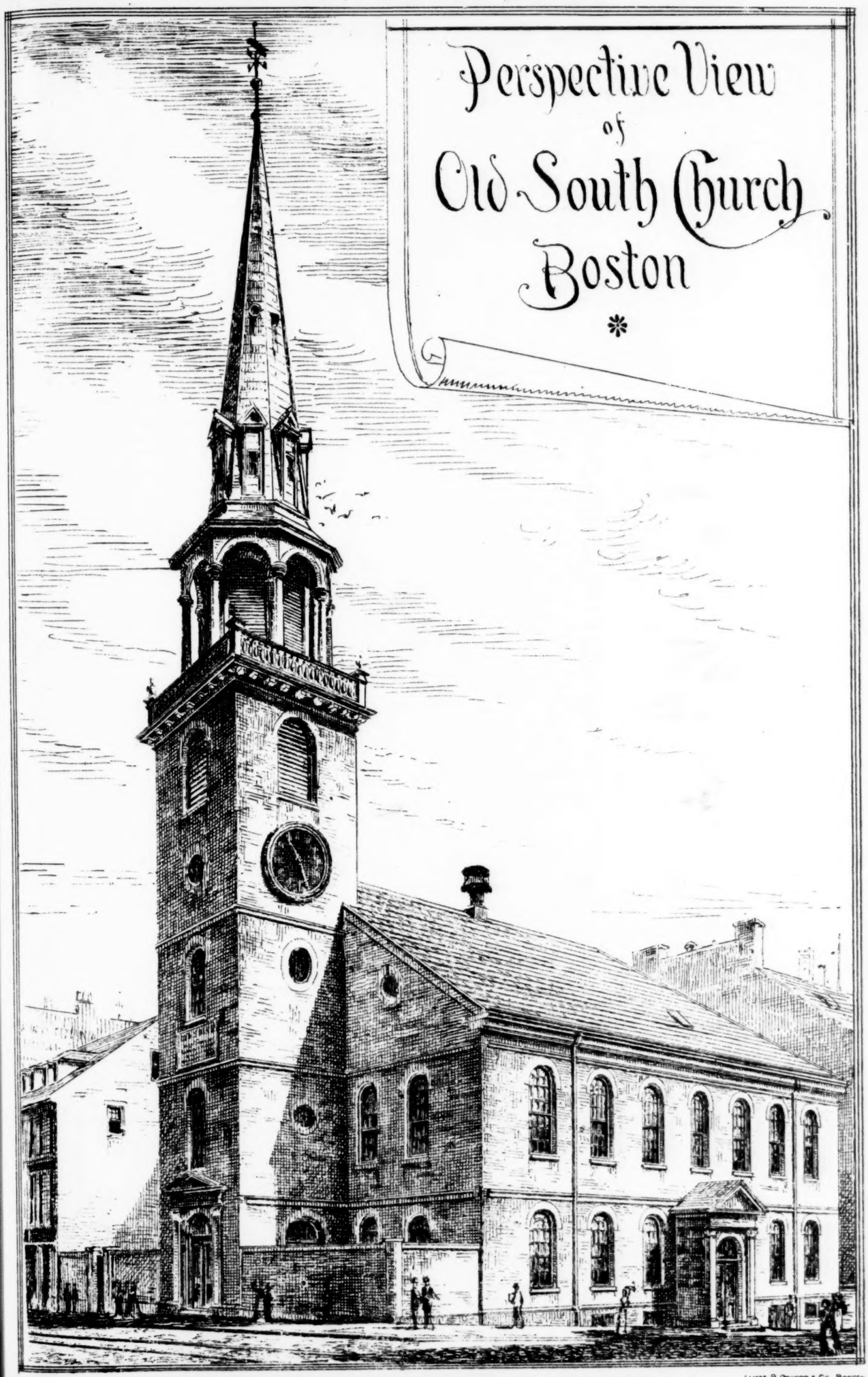
DETAILS OF IRON STORE FRONT ... BROADWAY.

R.M. HUNT. ARCH.T. NEW YORK. N.Y.

F.M. Howe. Del.

HELIOTYPE JAMES R. OSGOOD & CO. BOSTON

Perspective View of Old South Church Boston



HELIOTYPE

JAMES R. OSGOOD & CO. BOSTON

THE FINE ARTS AT THE CENTENNIAL. — III.

THE GERMAN PICTURES.

THE indications of new impulses in German art are found to be neither numerous nor significant among the pictures in Memorial Hall. The collection is a consistently commercial one; indeed, there is no effort to disguise its character. The display does not rival an ordinary local exhibition either in numbers or importance, and is no more valuable for the purposes of study. The two most flourishing departments of the national school, the new Munich and Dusseldorf branches, may be said to be entirely unrepresented; so that the visitor may see little or none of the fresh young blood in German art, but must linger over the tag-ends of the old theoretical and formal school, and the monotonous productions of professed picture-manufacturers, without an encouraging example of the new and healthy movement. There is the host of Piloty's followers; there are Dietz, Lindenschmidt, Deffregger, Grützner, and Matthias Schmidt. We miss the whole *coterie* of the Munich painters, if we except Gabriel Max, with one of his least important pictures, "The Anatomist;" and Prof. Wagner, with his "Roman Chariot-Race," a sale copy of the original picture, by the way, found in the collections of American picture-dealers dignified with special sections of the art department. The Dusseldorf landscape-men who now paint, the best of them at least, in a style quite the reverse of the old manner, show nothing of note. Lenbach, the chief of the portrait-painters, sends no example; and Gustav Richter is seen only in his portrait of Minister Bancroft, which is hung too high to be recognizable. Carl Steffeck, that most sympathetic of the horse-painters, has a picture of a steeple-chase, which does not give a suggestion of the poetical nature of the artist, and a brazen, incomplete equestrian portrait of the Crown Prince. It is in the latter work we plainly see how the influence of the military aristocracy affects the art of the empire. The success of the Berlin biennial exhibition, two years ago, was a childish little illustration of the surrender of Napoleon, where the unfortunate emperor looked like a whipped schoolboy, and Kaiser Wilhelm like a severe old pedagogue. Following the equestrian portrait in natural order come the glorification of the victory monument in the Thiergarten, and two surrenders of Sedan, both probably correctly drawn from authentic information from one side, since in each Gen. Reilly cringes painfully as he approaches the group of pompous, puffy officers headed by the Kaiser. The two canvases differ only in the details of execution. When art is the child of genuine patriotism, it may have noble qualities; but, when its impulse is nothing greater than the elation of success in arms, then the result is of the same order as the spirit that prompts the production.

German *genre* painters are legion. Their works have a certain sameness which is the monotony of successful assimilation of the methods of recognized leaders. It would take a degree of knowledge and intuition above the average, to detect marked difference in the quality of the execution of the majority of the pictures of this class. As the old black bier, seen in Knaus's "Village Funeral," serves for the whole colony of Dusseldorf painters, and is copied with unvarying exactness, so the accessories of *genre* pictures at large are constant repetitions; and, since the accessories are often the backbone of the pictures, the qualifications of a successful *genre* painter are little more than an easily acquired skill in imitation, and some knowledge of the figure. In these intensely logical pictures every quality is the result of reason. The German peasant-painter gives us his model, with his pots and pans and quaint costume; and likely enough the dominant impression left on the mind is the effect of the accessories. There is no German Breton, Israels, or Munkácsy; for the model is looked at only in his picturesque aspect, and not with sympathetic human interest. That there are strongly original men, is sufficiently proved by the list of examples in the collection under consideration; and perhaps the worst that can be said of them as a class is, that they paint with a tiresome facility. Paul Myerhein sends a study of a lion, rather a mediocre production at the best, and only calculated to make one draw unfavorable comparisons with his earlier and more conscientious works, like his famous "Menagerie." Although there are none of Grützner's jolly friars, there is an interior of a beer-hall, by Ferd. Meyer, that resembles strongly enough the works of the former, perhaps more in color than in finesse of execution. The subject is not attractive, — a tipsy peasant made a guy of by his companions. A concert in a beer-garden, by C. Gerbel of Weimar, is less caricatured, but is always the same puppet-show in a new dress. There is nothing better painted in the way of interiors than Dielitz's study of a Tyrolese seated near a porcelain stove, lighting his pipe; but even its skilful execution cannot make it interesting. The academic productions call for consideration more on the score of size than any other quality. One may see Christopher Columbus and his frenzied followers, quite in the style of a child's picture-book; Faust and Margaret in the prison scene, grouped like jumping-jacks; and different motives from Shakspeare of varying degrees of seriousness and artistic conception. Neither of them will detain the visitor long enough to weary him.

The landscapes are few in number, but there are several good ones among them; none, however, more attractive than a study of a section of flat country, with broken ground, scattered trees, and a bright, sunny sky full of white clouds, by R. Von Poschinger. An echo of its frankness is found in "A German Harvest," by Von Starkenburg, which has a good sunlight effect, and some skilfully handled figures. A third example of strong out-of-door effect is Xylander's sparkling moonlight at sea. Adolf Lier's quiet autumn landscape, a roadway along a forest of deciduous trees, may escape notice from its modest effect; but it deserves careful study as the most earnest piece of painting on the list. It is a fair example of the artist's average work. Like many other strong German landscapists, he confines himself almost entirely to autumn scenes.

IRON CASTINGS.

CASTINGS for building-purposes consist usually of foot-plates for columns, sill-courses with or without panels for illuminated tile, the plates for the tile of the various forms used, columns for the interior and exterior lintels, box, T, or skewback cornices, window sills and caps, spandrel fillings, and the various pieces for ornamentation which are often cast separately and attached afterwards, crest-railings, stairways both straight and circular, and girders both straight and arched.

Foot-plates are used to support other work on the top of masonry, and for columns are usually rectangular or square, from one to four inches thick in the centre, bevelled off from ½ to 1½ inches at the edges. A boss or cross is sometimes raised in the centre, and the plate faced down in a lathe outside of this projection for a bearing for the column. If there be no projection, the upper surface may be planed instead of faced in a lathe. These plates are usually set in cement; but, if the top of the stone-work be sufficiently well dressed (bush-hammered), a sheet of lead is a better though more costly bearing. Great care should be exercised in setting the plates for columns truly level; and a very common practice of truing up columns by the interposition of thin pieces of sheet-iron between the plate and column, known as "shimming," should not be tolerated.

Plates for girders are usually rectangular, with the greater length placed along the wall and at right angles to the girder. Their size is to be proportioned to the load carried; and the object of such plates is to distribute the load, and to prevent too great a concentration upon any one portion of the masonry; and the true surface and bearing is only to be obtained by a certain amount of rigidity obtained by thickness of the plates. As an illustration of the range of practice, we will instance two examples as extremes. The plates under the ends of a 96′ truss rafter were 36″ x 18″, and 3″ thick at the centre. The trusses were about 17 feet apart. This may be considered as the extreme of caution. The other case is also a roof, the span of which is 92′, the trusses being about 15′ apart. The plates are 12″ x 10″ of wrought iron three-sixteenths inches in thickness. This is the extreme of risk, and between the cases is a very wide variation. The casting of plates presents little difficulty, and only requires ordinary care.

Sill-courses are usually made in lengths of from 8 to 20 feet, with one vertical face or riser on the front, and a horizontal tread from 15 to 36 inches, and, if broad, a vertical web or stiffening flange at the back, with a depth depending on the distance between the supports, of a thickness from ½″ to ¾″. The supports are stone piers, a stone wall, or iron basement columns. If there be a continuous wall, no flange at the back of the sill will be necessary. Where the sill carries the columns of the first floor, it must have a direct support, and should be planed on the upper surface at the column bearing, and should be carefully set level. These sills are often cast with open spaces, in which is placed a panel of illuminating tile, often on the riser and sometimes on both riser and tread. If the sill is carried on stone piers, it is to be carefully set, and flushed with cement to secure a good bearing.

When iron columns are used in the basement, the best plan is to carry the column through the sill, and to support the latter by

brackets cast on the column, and faced; the bearing of the sill on the bracket should also be faced. Sills are often very troublesome castings to make, as the metal is often very unevenly distributed. At the junction of riser and tread there is usually a projection (an ornamental moulding) and moulded panels; and, as the metal is cooling, the shrinkage will often pull a sill all out of shape, and will sometimes destroy it entirely. It is a common practice to strip the sand from the edge in order to cool it first: this in a measure will help, but good judgment in the matter is very necessary.

Illuminating tile is of various kinds, but consists always of an iron plate studded with projections, and with apertures between them, in which are set thick pieces of common glass. The glasses are set in a cement, and are of various forms — circular, about 1½ inches diameter, being the most common; hexagons of about four inches side are used, and smaller ones. The best kind is Hyatt's patent "lead band," in which the glasses are circular, and set in the iron with a leaden cast thimble which is calked tight. They are more expensive than the other kinds; but they never leak or get loose when properly made, and are decidedly superior in every way to the others.

The casting of a plate say 3′ 6″ wide and 7 or 8 feet long, perforated with small holes 1¾″ diameter close to each other, and ¾″ thick, is always troublesome, as there is such a number of small portions to be looked after; and there is moreover a very strong tendency to warp. A smooth, perfectly true iron pattern, is the only thing which can be used with any thing like good results; and even then a good many pieces will be found in the scrap pile. These panels are set in the recesses in the sills prepared for them, or are carried in cast frames on the sidewalk beams when used outside. For inside floor lights, thick plates of glass 1″ to 2″ are more often used, with a width of from 19 to 24 inches, and set in iron frames of cast or wrought iron.

Iron columns are made either cylindrical or rectangular, and sometimes are left with an opening along one side to be filled with brick-work. Columns are usually cast on the side in green sand, with dry sand cores, which must be carefully made and properly vented; the core must be rigid, and is usually prevented from springing by the use of the "chaplets," or "anchors," whose use has already been mentioned. To illustrate the necessity of chaplets, it may be mentioned that for a 12″ column 1″ thick and 18′ long, the springing upward of a solid cast-iron core bar, 8″ diameter, is, under the weight of iron with only 12″ head, exactly ⅓″, which would result in a column ⅝″ thick on one side, and 1⅜″ thick on the other; and, if there is 24″ head of liquid metal, the column would be ⅜″ thick on one side, and 1⅝″ thick on the other. Some engineers never understand that nothing but direct support will give any approach to rigidity, and condemn the use of chaplets in columns, when the evils introduced by their absence would be far worse than those caused by their presence. The iron must be hot to unite solidly around the chaplet.

In architectural work, for the sake of appearance, much larger columns are usually employed than those needed to carry the actual loads; and it is only rarely necessary to consult the many good tables for the strength of columns. The best table in use is that of James B. Francis, Esq., the eminent engineer, of Lowell, Mass. Large columns at the corners of buildings are commonly square; and if the panelling is to be thin, it will be advisable to make the column in vertical sections, and bolt them together by flanges, as the shrinkage very often renders them unsafe, and they have even broken when in the mould after they have been stripped.

Box lintels are used to carry walls over the openings in lower stories. They usually consist of a broad bottom flange with two or more upright tiles; and their strength is computed as for a T beam.

Cornices are usually cast separately, and as thin as they can be made, and are secured to the lintels by small screws.

Skew back lintels are T shaped girders with one or more vertical webs, with end plates, between which a brick arch is turned; and the idea has been, that they only acted as tension-rods to carry the thrust of the arch; but in reality any settling of the arch leaves the weight resting on the girder, and their strength should be found as for a T beam. Hodgkinson's double T beams and arch and tension-rod girders are used; and in our opinion the latter have all the bad features which Sir William Fairbairn finds in trussed cast-iron beams. (See "Researches on the Application of Iron to Buildings.") When a T or Hodgkinson beam is not strong enough, wrought iron should always be used.

The small ornamental work presents little difficulty; and it is only when combined with large and irregular sections, that trouble will be found.

Cast-iron stairs present all the troubles found in sills; and if made in one flight the multiplication of small changes of form often renders the fitting into place a work of great labor; a flight of seven steps sometimes varying 2″ from the length of the pattern (measured on the slope). Circular stairs are made in single steps, one tread and one riser, and are fitted over a wrought-iron centre-post, from 2″ to 4″ in diameter. Railings for them are made from a curved pattern, and the work is apt to cost more than the founder expects it to.

This brief sketch has only been given with the hope of in some way interesting engineers and architects in the work of the founder, and is known to be very far from complete; but, if only one reader is found who will study a little the work in the shop, the object of this article will have been reached. — *The Engineering News.*

CORRESPONDENCE.

CHICAGO.

THE designs for the completion of our much-abused Custom-House and Post-Office have at last been finished; and it has been my privilege to examine them in the office of the superintendent in this city. Mr. Mullett bequeathed to his successor a magnificent perspective view of the building as he intended to complete it. It was photographed, and copies were extensively circulated in this city, three years ago. It was engraved for our enterprising illustrated real-estate periodicals; and smaller pictures of it grace the numerous books descriptive of Chicago's progress and renown, which are sold to visitors at the hotels. Meanwhile, the last of the examining commissions recommended that the design be amended with a view to equalizing the weight on the already doubtful foundations. Hence the remodelling of the design became a necessity; and Mr. Potter is free from any charge of having intentionally tampered with Mr. Mullett's design, the responsibility resting with the commission whose report was indorsed by the Secretary of the Treasury. Mr. Potter has therefore had a difficult task to accomplish; and the undertaking has been the solution of an interesting problem, and that most successfully. The equalization of the weights to the surfaces of foundation necessarily involved an entire change of the masses of the upper part of the building above the cornice-line. Those who have seen the design will remember that the building, which is very irregular in outline, was to have been surrounded by a continuous cornice, following all the indentations of the structure. This cornice was of great projection and weight, while above it was to have been a mass of gables, dormers, chimneys, and towers; eight of the latter being surmounted with domes of stone, each carrying an open cupola also of stone. These were of great height and weight, and, taken in connection with a continuous cornice of unusual projection, would have produced a very incongruous design.

The whole building was apparently intended to be Gothic in design; but the first story had no relation to that style. The second and third stories, moreover, were decorated with pilasters between the windows, with Gothic detail; and rusticated quoins of uniform size at all the angles, which aggregated not less than twenty-four in number. The windows of the second and third stories were all arched, being semicircular at the intrados, and pointed at the extrados. The second and third story stone-work being nearly all cut, it was inexpedient to make any change below the cornice-line. The new design shows the cornice considerably reduced in projection, so as not to intercept the view of the roof work. There is also a great saving in weight by this change. Mr. Potter has abolished four of the towers altogether, and covered the space indicated by them on the plan, with graceful wedge-shaped roofs connected by a steep ridge. These form the motive of the north and south centres. The roofs on these fronts are continued out to the corners of the building, having lower pitch than the centre projection; and hipped at the angles, instead of being finished with gables as indicated on the original design. The great length of this roof is relieved by well-proportioned dormer windows of stone.

On the east and west fronts, each nearly three hundred feet in length, there are wide central projections; while the corners show the bold projecting hipped roofs of the other fronts. Here the dome-capped towers are replaced by *pavillons*, having hipped roofs carried to points ending in iron finials. There are two of these on each of the main fronts, and standing at the angles of the central projections. They are connected by steep ridge roofs higher than those on the north and south fronts. Each of the *pavillons* and the spaces between them have prominent dormer

windows with gabled roofs. These dormers are connected by a wall forming the base of the roof, which in French is called a *bahut*, and for which, unfortunately, we have no English name. These centres have an imposing effect in the drawings, and the details harmonize well with the rest of the building. The chimneys throughout are admirably managed. The whole building has a genuine Gothic roof, which means that the whole of the roof, except that which slopes to the court, is visible; there is nothing about it to which the word Mansard can be applied. There is no violent and sudden change in detail from the old to the new part of the building. The Gothic detail is not too pronounced. The whole effect is decidedly harmonious, and the roof looks as if designed for the building; while the old design had no such effect, but rather resembled a market-house of the last century. What is most remarkable about the new design is the consistent Gothic character given to the whole structure, which it never had in the original drawings, and certainly does not have as far as the building has now progressed, which is to the third story window-sills. When completed, people will admire it as a whole. There will be a quaintness and originality about the whole structure, which will make it stand alone among the great buildings of this country, though it can never be regarded as a model of good architecture. It has the advantage, too, of being better located than any of the other first-class buildings recently erected for government use.

The past week has witnessed the downfall of another building, or at least a part of one. Such occurrences have not been more frequent in Chicago than in other large cities; and, considering the hurried way in which so many storehouses were built four years ago, it is remarkable that so few have failed from overloading. The store in question, located at 11 and 13 Randolph Street, was a double store five stories high, used for the wholesale grocery business. The daily papers have had their usual full accounts of it, which contained but little information for the professional reader. About the sum of the facts is, that a portion of the fourth and fifth floors, not far back from the front line, fell in the night, when no one was on hand to witness the place and manner of the first breaking. A part of the roof was carried with the floors, and below the fourth floor all the floors were more or less carried away; the fact of their being less injured than the others being the only reason for locating the break in the fourth floor. The store had wooden girders through the centre on each story, supported by iron columns, except in the fourth and fifth stories where they were of wood. Whether the joists, or girders, or columns gave way first, there is no way of telling. As no one was killed, there has been no investigation. A professional gentleman in search of information was refused admission to the building. It was admitted by the tenants, that the two upper floors were overloaded; and this is published as the cause of the disaster. It does not seem to have occurred to any one, that there is no such thing as overloading a store, when properly constructed, with the goods for which it is intended. As this building was erected four years ago in the heart of the wholesale grocery trade, there could have been no mistake as to what it was built for; and the inference is, that the fault must have been with some part of the building, rather than the innocent groceries with which it was filled.

The wholesale denunciation of iron columns by boards of underwriters as being dangerous in case of fire, together with the opportunity to save money by substituting wooden ones, has induced many owners to order wooden posts for interior supports; and our architects, while being extravagant in the use of superfluous metal in iron columns, have, on the other hand, been too negligent to compute the strength of wooden ones. It has not been unfrequent to find defective wooden posts in many of our business buildings; and we may safely look to them for the explanation of the mysterious disasters.

Faults of this nature have recently been discovered in the two largest stores in this city. The immense wholesale store of Field, Leiter, & Co., was hurriedly built with green wooden posts throughout, even in the basement story, where they were used against the advice of the architects. During the past year this firm have been renewing the posts found to be rotten as fast as discovered, but have simply substituted new posts for old ones. The decay of the posts was doubtless hastened in this case by their being covered with several coats of paint, grained and varnished, thereby excluding air from the wood almost as completely as if they had been cased with metal. The other building is the last new extension to the store of J. V. Farwell & Co. This was erected in 1873; and the firm, thinking to protect the columns and girders from the contingency of fire, covered them with a thick coating of lath and plaster. In less than three years the girders decayed so much in places that the ends of the posts came together, entirely crushing the rotten girders, for no quills had been used between the ends of the posts. Some of the posts also had decayed at the ends. They are now at work taking out all the columns and girders, substituting new wooden girders and iron columns connected by chairs which straddle the girders where the columns meet.

The interior columns of our new club-house, which are of the Drake and Wight fire-proof pattern, and built solid of iron, fire-clay, and Portland cement, will hardly meet the fate of these plastered wooden posts. They have just been finished, and are in the hands of the decorators. The capitals have been carved in wet clay by James Legge, and are fine specimens of his artistic work. After carving they were cut in two, and baked into terra-cotta, and then set in place with Portland cement, forming part of the external covering of the solid columns. The inventors have been so well satisfied with the results as seen in these, that they are recommending the use of fire-clay and Portland cement for exterior coating in preference to wood.

The alterations now going on in Farwell's store have given an opportunity to test the quality of the concrete which was used for all the exterior walls of this building. Workmen are now engaged in cutting additional openings in the rear wall; and I wish that all the professional gentlemen who are discussing the merits of concrete walls in your columns could see the operation. I have watched the men at this work, and have no reason to doubt the efficiency of concrete such as has been used in them. A workman assured me that it was harder than any brick wall he had ever cut. The process is the same as chiselling stone. No very large spalls can be knocked off; and pounding the wall with sledges seems to have no effect. The concrete had all been made with brick spalls and bats, using mainly the *débris* of old buildings. The cements generally used here had been employed in the wall; and the surface had been plastered with Portland cement. I am informed, however, that the cost was greater than it would have been, had common brick laid in mortar been used.

A WORD WITH CLIENTS. — II.

I HAVE said that much of the bad architecture which stares us in the face is the result of persistent interference, on the part of the client, with the prerogative of the architect; and to the same source we may trace much of the bad building that disgraces our time. Those who build, or who contemplate building, often lose sight of the relative position of all the parties. They do not seem to understand that the architect at once identifies himself with his client's interest, that it is to his interest to see that the client has the full worth of his money; that, in a word, the design is strictly carried out, and the workmanship is up to the standard called for in the specifications. But it is so; and it is manifestly due to the architect, when the design is accepted, that he be permitted to select the builder; or, if a competition is to be opened, that he be allowed to designate those who are to compete. But no; the client must have a hand in this, as he has had a hand in the design; and when the architect has selected two or three reliable builders, either of whom would do the work well, the client names two or three more, and is quite as likely to give every applicant a chance, especially those who have a reputation for turning out work at a low figure. One of these men, without capital and with little or no credit, is pretty sure to get the job. It is idle for the architect to protest: the client sees only the difference in the figures, and thinks that the architect is prejudiced, or that he urges the claims of another through favoritism. And so, with a heavy heart, he who has had so little to do with the design, but who has so much of the responsibility connected with it, revises his specifications to see that there are no loopholes through which a crafty builder may crawl, multiplies his working-drawings, that there may be no excuse for any defects in the details of the work, and then gives ten times the amount of time to the construction of the house that would be required if the builder under him were honest. And yet, with all his care and watchfulness, he may be cheated; for, the moment his back is turned, the foreman — like master, like man — puts in inferior stock where it can be speedily covered up, and scanty nailing where it cannot be detected till a future seasoning of the woodwork reveals the fraud.

Take, for example, the laying of a floor. The architect may examine the stock, and have the good separated from the bad; and when the work is done his eye may not be able to detect the introduction of any of the inferior quality, if the builder has been

smart enough to lay it with the sappy side down. It all looks well; but how about the nailing? He comes in from time to time, suddenly and unexpectedly; the men keep on with their work, and put down the board they have just squeezed into its place, nailing it properly and as it should be. He sees another and another board nailed in the same manner, leaves, and goes to another part of the building; and, the moment his back is turned, one nail is made to do the duty of three or four.

And so of mason-work. I have taken down rod after rod of what appeared on the face to be a good foundation wall, for the reason that the mason had only used mortar on the face of the wall, and had left the rest dry. Dishonest at heart, and this feeling intensified by the desire to get out of the job without loss, he and his men become lynx-eyed; and, the moment they see any one approaching who would be likely to inspect their work, they hurry on the mortar, and strive to cover up their tracks.

And so of a thousand other frauds that are practised by dishonest builders, who resort to such measures to enable them to underbid reliable and good men. It is the old story of trying to get the maximum of show for the minimum of outlay. We cheapen every thing, even the work of building dams to retain millions of gallons of water, which we know, if let loose by the giving-way of the wall, would carry loss and distress to hundreds of homes. We want to know from our own experience if it be possible for a horse to live on a straw a day, and to see if we cannot solve the problem that would make one dollar do the work of two. But, with all this economy as to outlay, we want show, we want display; and, if we can have that, we are willing to take up with the shadow, rather than to pay what we must pay for the substance. It is "diamond cut diamond." The architect may do his best to protect his client's interest; he may visit the work every day, nay, two or three times a day; and yet frauds can be smuggled in by a man who is forced to it to make himself whole. It is vain to hope that a builder will give his employers a dollar's worth for ninety cents: he may contract to do so, but we may depend upon it, that, as the grocer who offers to sell coffee ready ground for less than he asks for the green berry will supply us with any thing but Java or even Rio, so the builder will contrive to cheat in some way to avoid a loss he would otherwise sustain. No architect would seek to escape the responsibility that properly falls on him; but let him select the men who are to carry out his orders. Have confidence in him, and believe that he will promote your interest, for in so doing he will promote his own. Ask any favor of him in connection with his profession, and you will find him ready and obliging; but do not expect him to superintend the work of the cheap Jack you may employ, for in so doing you ask him to make brick without straw.

NOTES AND CLIPPINGS.

ICE-HOUSE. — An exchange states that they are erecting a building for the manufacture of ice at New Orleans. It is to be 115 by 150 feet, 50 feet to the eaves, and with walls 3½ feet thick, which are triple, with air-spaces and sawdust between the walls. The interior contains over 5,000 three-inch iron tubes, 36 feet high, placed upright in pairs, each pair being connected at top and bottom. Vaporized ammonia, forced through these tubes by steam power, reduces their temperature below zero; and water dashed upon them in a spray freezes upon them, gradually forming an ice coating which is 36 feet long and often 2½ feet thick. When the process is completed, the ice is sawn off the tubes. Only one-half the tubes will be used this season, but they will be able to turn out 80 tons of ice a day.

REREDOS. — A memorial to the late William B. Astor is to be erected in Trinity Church by his sons, John Jacob and William B. Astor, jun. It will be a superb altar and reredos of white marble, alabaster, and Caen stone, relieved by gold and mosaic. The design is by F. C. Withers, who will go to England next month, to order the construction.

THE NEW YORK COURT-HOUSE. — In the Board of Apportionment, communication was received, stating that the commissioners had concluded to complete the Chambers-street porch of the building as originally designed, and also to complete the interior of the main hall to the ridge of the roof, and place upon the latter a skylight sufficient to properly light the interior of the building. The cost of the work, as estimated by Mr. Leopold Eidlitz, the architect, will be $492,681.50; and the completion of the porch will, it is said, result in saving rentals amounting to $20,000 to the city. The matter was laid over.

A CONDEMNED CHAPEL. — The large brick chapel finished a year or two ago, in Brooklyn, known as the Central Congregational Church, has been in a dangerous condition for some time past, owing to the settling of the roof. A short time ago, a consultation of architects was held, who at once condemned the structure. The walls are much bulged; and whether it will be possible to secure them without an entire reconstruction has not yet been determined.

MR. EDWIN L. HOWLAND. — In the recent death at Providence of Mr. Edwin L. Howland, an Associate of the American Institute of Architects, the profession has lost a young man of much promise. He had erected several buildings in Providence, the most noticeable of which are the Wilcox Building and the Pilgrim Church. Mr. Howland was a widower, and leaves no children.

ACCIDENT IN THE NEW BERGEN TUNNEL. — The archway of shaft No. 5 of the new Delaware, Lackawanna, and Western Railroad tunnel through Bergen Heights, gave way June 29, about half-past four, crushing beneath it three workmen. The unfortunate laborers were almost dead when dug out by the other laborers. Two are not expected to live. More accidents have occurred at this shaft than at all the others, and the workmen sometimes called it the Death Shaft, while many who are superstitious frequently refuse to work near it.

CITY HALL. — Workmen are tearing down the west wall of the City Hall, New York, preparatory to rebuilding that side of the edifice, which has settled on account of improper piling when it was built, sixteen years ago.

VAN NOSTRAND. — The July number of *Van Nostrand's Eclectic Engineering Magazine* contains among other interesting articles, one on the reports of the New York Dock Commission.

THE METAL WORKER. — In the issue of the *Metal Worker* for July 1, will be found an abstract of the report to the Public Health Association of New York, on "The Conditions of Excellence in Plumbing Work," prepared by Mr. James C. Bayles.

THE FOREIGN PERIODICALS. — The *Architect*, in speaking of the results of the Conference of Architects, says that the collections of drawings brought together to illustrate the papers of Messrs. Sharpe, Spiers, Burges, and Pullan, were "perfectly bewildering in their magnitude and excellence;" and this may well be said when it is known that Mr. Sharpe illustrated his paper on the architecture of La Charente by one hundred and sixty drawings selected from six hundred and sixty-two sketches made by the Architectural Association during their annual excursion last year. Mr. Godwin criticises unfavorably Mr. Burges's paper on Greek art. Sir Gilbert Scott's address is given, showing that in London there are good specimens of all stages of mediæval art, and that Westminster Abbey contains, with one exception, all varieties of mediæval vaulting. The seventh article, on the Law of Fixtures, is given by a barrister. Articles of lesser note are, a gossipy critique on George Sand as an art critic; a short paper giving the results of a conference held concerning the health of towns; and an abstract of the reports of the Ninth Annual Convention of the American Institute of Architects. In the *Building News* will be found the continuation of Mr. Sharpe's Architecture of La Charente, with illustrations; an interesting discussion on terra-cotta churches; and papers on improved dwellings, on Mr. Sharpe's lecture, and on Greek art. In the *Moniteur des Architectes* will be found a review of the *Salon* of 1876, the conclusion of the investigation of the accident caused by the failure of an arch supporting a floor, the complete programme for a new Federal Building at Berne, and the text accompanying the illustrations of a proposed temple of Victory at Massena in the time of Adrian; and this is not the work of a Frenchman, as subject and treatment would lead one to expect, but of Sir Thomas Donaldson. The *Encyclopédie d'Architecture* gives as illustrations another section of the *Magasins du Bon-Marché*, a section of the church of *St. Sulpice de Favières*, and three plates of lesser importance, one of which is a portion of a factory-front treated in colored brick and tile.

PALESTINE. — In speaking of certain photographs recently arrived at New York, the New York *Times* says, "In a picture of Ammon, the Rabbath Ammon of the Old Testament, and the place which Joab besieged when he 'placed Uriah the Hittite in the front of the battle,' are seen the ruins of a theatre. Forty-six tiers of seats are standing; and they are as true to-day as when the builders set them up. Throughout they do not deflect one-eighth of an inch from the plumb and level. The Temple of the Sun at Jerash shows eleven columns still standing, splendid specimens of Corinthian architecture. Though they are forty-five feet high and five feet in diameter, the immense capitals are finished as delicately as lace-work. The leaves are traced almost with the lightness and perfection of nature. There is a fine specimen of similar work in the 'Serai,' or 'Convent of Job,' at Kunawat. Here the solid blocks, which had not yet been carved into capitals, still rest unfinished on the tops of many columns. In Jerash, which is rich in ruins, are a triumphal arch and forum. The arch, though not older than Trojan's time, is a beautiful relic, showing some unusual features, notably the singular vase-shaped sections of the columns, ornamented with acanthus leaves. Of the Forum, fifty columns are still standing, and little of the entablature is broken. The temple of Thelthatha, of which a portion of the north wall alone remains, is a noble specimen of Ionic architecture. There are nine courses of stone between the stylobate and entablature, all truly squared, none bevelled. The temple at Musinear, which a Greek inscription tells was built during the reigns of Marcus Antoninus and Lucius Verus, A. D. 161–191, shows some interesting work. Outside, the Doric columns stand in massive perfection, while within, the Corinthian show their delicate capitals; and just below them, on each column, a wreath is beautifully carved. There are in all ninety-nine negatives, which have been placed in the hands of Mr. G. G. Rockwood, who will take copies from them for subscribers to the exploration fund."

NEW CHURCH. — Application has been filed for the erection of the First Reformed Episcopal Church at Madison Avenue and Fifty-fifth street, New York. The building will be 75 feet high, two stories, 66 feet wide, and 100 feet long. It will be built of brown stone, and will cost about $50,000.